

## **REMARKS**

This responds to the Office Action dated on January 13, 2006. Claims 1 and 4 are amended, claims 5-8 are canceled; as a result, claims 1-4 and 9-35 are now pending in this application. Detailed responses to the Office Action are as follows:

### **Information Disclosure Statement**

Applicant submitted a Supplemental Information Disclosure Statement and a 1449 Form on September 8, 2003. Applicant respectfully requests that an initialed copy of the 1449 Form be returned to Applicant's Representatives to indicate that the cited references have been considered by the Examiner.

### **§102 Rejection of the Claims**

Claims 1, 3, 11 and 17 were rejected under 35 U.S.C. § 102(e) for anticipation by Hagen et al. (U.S. 6,888,948, hereinafter "Hagen").

Applicant amended claim 1 to better recite the present subject matter. It is respectfully submitted that Hagen fails to provide the recited subject matter of claim 1. In particular, it is respectfully submitted that the programming of FIG. 6 fails to provide the recited plurality of parent sets and that host 236 fails to provide the recited toggle device. Furthermore, it is respectfully submitted that Hagen fails to provide the processor as recited in amended claim 1. Claim 3 is believed to be patentable as a further limitation of claim 1. Applicant further respectfully submits that Hagen fails to teach a hearing aid fitted by the apparatus according to claim 1, as provided by claim 11.

Claim 17 relates to a hearing aid having the recited limitations. It is respectfully submitted that none of the cited references relate to a hearing aid having the recited toggling device.

Reconsideration and allowance of the rejected claims are respectfully requested.

Claims 1-3, 11 and 17-19 were rejected under 35 U.S.C. § 102(b) for anticipation by Weinfurtner et al. (U.S. 6,035,050, hereinafter “Weinfurtner”).

As stated above, Applicant amended claim 1 to better recite the present subject matter. It is respectfully submitted that Weinfurtner fails to provide the recited subject matter of claim 1. In particular, it is respectfully submitted that Weinfurtner fails to provide the processor as recited in amended claim 1. Claim 3 is believed to be patentable as a further limitation of claim 1. Applicant further respectfully submits that Weinfurtner fails to teach a hearing aid fitted by the apparatus according to claim 1, as recited by claim 11.

Claim 17 relates to a hearing aid having the recited limitations. It is respectfully submitted, among other things, that none of the cited references relate to a hearing aid having the recited toggling device.

Reconsideration and allowance of the rejected claims are respectfully requested.

#### §103 Rejection of the Claims

Claims 4-16 and 20-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weinfurtner in view of Watanabe et al. (U.S. 6,004,015, hereinafter “Watanabe”).

It is respectfully submitted that the rejection fails to state a proper *prima facie* case of obviousness on several grounds. The rejection correctly notes that Weinfurtner does not relate to a genetic algorithm operator “for performing mutation or crossover on the parent sets and producing a child set in an effort to converge on a single solution set.” The rejection then asserts:

Watanabe et al teach an optimization adjusting method for converging on a single solution for application of hearing aid fitting (see column 3). The method comprises crossover operators and genetic algorithms (figures 67 and 69). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Weinfurtner et al by utilizing the optimal solution technique expressed by Watanabe et al for the purpose of improving the hearing aid fit for a user.

Applicant respectfully traverses this assertion on several grounds. It is respectfully submitted that Watanabe does not relate to selection of pairs as provided by the present

application. Watanabe's references to an "evaluation value" and "fitness" appears to be a form of ranking using many levels of fitness. The following is taken from Watanabe's column 24:

The evaluation value acquisition section 104, as previously described, calculates an evaluation value  $E_k$  for each solution vector  $p_k$  ( $k=1, \dots, n$ ) using a fitness function, for example, as shown by Expression 2.  
[Mathematical Expression 2]

$$35 \quad E_k = \frac{w(q_k) - w_{\min}}{\sum_{i=1}^n (w(q_i) - w_{\min})}$$

where  $q_k$  represents a coordinate vector when the solution vector  $p_k$  is mapped in the original  $m$ -dimensional space, and  $w(q_k)$  indicates the smallest value of the function values  $w(q_k)$  when the solution vectors  $p_k$  in the set P are mapped back into the  $m$ -dimensional space coordinates, the function values being taken over all the solution vector sets obtained up to the  $k$ -th update. As can be seen from Expression 2, the value obtained by subtracting the minimum function value in the solution vector sets so far obtained is normalized over all the solution vector sets. In the present embodiment, the problem can be regarded as the maximization problem that maximizes this evaluation value.

50 In the fitness calculating section 105, a value to be used to judge the fitness of each solution vector is calculated from the evaluation value calculated by the evaluation value acquisition section 104. Various functions can be considered for deriving the fitness  $f_k$ . In this example,  $f_k$  is made equal to  $E_k$ , which means that the fitness increases with increasing evaluation value, so that the problem can be treated as a maximum value estimation problem.

Applicant also traverses the combination of Weinfurter and Watanabe, since there is no teaching in Weinfurter or Watanabe of a system of comparison as taught in the specification or recited in the claims. Furthermore, the references provide no motivation or suggestion to be combined. Thus, the assertion of what would have been obvious to one of skill in the art is believed to be respectfully traversed.

Applicant also respectfully submits that the rejection fails to address the claims in particularity and thereby fails to state a proper *prima facie* case of obviousness. The claims also recite limitations which are not addressed or even mentioned by the present rejection. Furthermore, Applicant respectfully submits that claims 18-26 were never addressed by any of the rejections since none of the cited references relate to hearing aids having the recited subject matter of claim 17.

Reconsideration and allowance of the pending claims are respectfully requested.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6912 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

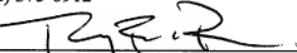
Respectfully submitted,

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Date June 9, 2006

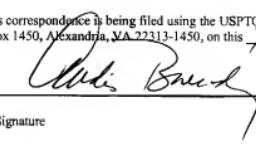
By 

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 9 day of June, 2006.

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